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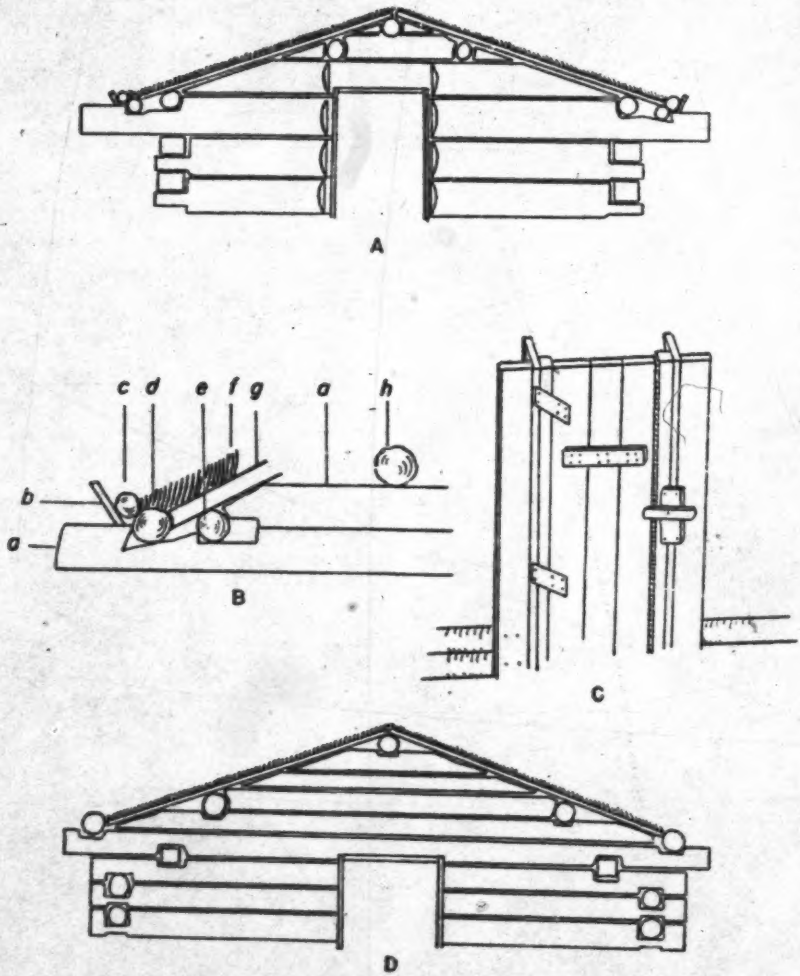

FIG. 4. Kaska Construction: A, Older type log cabin; B, Roof support in older type cabin (a, Width logs; b, Wedge driven into a drilled hole; c, d, e, Supporting legs; f, Dirt; g, Roof pole; h, Auxiliary ridge pole); C, Door for tent frame; D, New type log cabin.

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dog's neck and ties to the corresponding tab on the opposite pocket. The rear line passes under the animal's belly and is secured to the tab on the opposite side. When dog packs are used to transport fresh meat, they may be lined with an additional piece of canvas to absorb some of the blood. The bottoms of packs are patched with canvas or tanned moosehide, when they become worn. Dog packs are manufactured by women. Dogs can pack up to forty or fifty pounds, but loads are generally limited to about thirty-five pounds for a stretch of twenty miles. Among the Upper Liard Indians, women and girls were always seen to pack dogs (Pl. 7, A). A Nelson Indian reported that among his people men pack horses as well as dogs. Men everywhere, of course, pack dogs when traveling without families.

When transporting goods by dogs in summer, one or more persons generally start out ahead of the animals. However, the dogs may be guided by chains until about a quarter of a mile from camp. The chorus of eager barking that arises from a camp, when dogs sense one or more of their companions being packed, is evidence of their eagerness to travel. In winter, dogs follow in the rear of people with snowshoes who break the trail. Traveling in winter, especially over crusted snow, often cuts a dog's foot. When this happens, rest stops are always marked by cutting a little brush which is thrown down for the animal to rest on.

The Kaska use both toboggans and sleighs. The toboggan is regarded as best suited for travel in the soft dry snow of winter. Although a sleigh is sometimes used in midwinter, it is recognized as being particularly adapted for traveling on the top of the crusted snow in late winter and early spring.

Toboggans are either purchased from traders or manufactured locally. The description of hewing and bending wood for toboggans has already been presented.[1] The vehicle is normally constructed with three or four pieces of freshly hewed birch pieces, about twelve feet long, six inches wide, and three sixteenths of an inch thick, but the toboggan whose construction was observed and is here reported fell considerably short of these specifications.[8]

After the first two feet of the boards have been bent to produce a curve, they are removed from the bending frame. The cleats, which held the boards together in the bending process, are left in place until all of the crosspieces have been put in position. The exterior sides of the two outside boards of the vehicle are first planed where they have been bent. This planing narrows the front of the vehicle, the reduced nose curtailing the hazard of hitting sticks and stumps along a trail. Such hazards might easily fracture the wood, particularly if the toboggan is traveling rapidly in cold weather. The next step is to substitute crosspieces for the temporary cleats. All of these crosspieces are manufactured of slightly dried birch. On the inner and outer surfaces of the extreme forward portion of the toboggan, two crosspieces are nailed. These are about three inches wide and three quarters of an inch thick (Fig. 3, B). All of the exterior edges of these crosspieces are bevelled with a knife, the bevelled surface being about one eighth of an inch wide. After the pieces have been put in position, the front of the toboggan is trimmed with a saw and planed to insure a smooth and even surface. The second crosspiece is less carefully finished, consisting of a

[8] The toboggan was made by Hans Donnelly whose narrow doorway has already been referred to. Hans is a small man and may unconsciously pattern objects to his own dimensions.

1 [category 116, pp. 72-74 -- Analyst]

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398 split spruce sapling, about three quarters of an inch in diameter. While the inner surface
● 335 of the pole is carefully planed, the outer bark is not removed. This crosspiece is nailed about a foot below the first pair and at the lowest point of the rising curve. The worker next cuts four crosspieces two inches wide and a quarter inch thick. These are placed along the body of the vehicle, beginning at the extreme rear and about twenty inches apart. They do not, however, extend the full width of the toboggan but to about three quarters of an inch from each side. On that side of the crosspiece which is to fit against the toboggan boards, the worker cuts two grooves at points about one inch from either end. These grooves are cut about three quarters of an inch wide and half an inch deep. To cut these grooves, they are first outlined with a pencil. The extremes of the groove are then sawed to the proper depth. Using the tip of a butcher knife as a chisel, the worker removes the wood between the cuts of the saw. The blade of the knife is also used to trim away uneven edges of wood. The outer edges and corners of each crosspiece are bevelled. The piece is then nailed to the toboggan, the nails being driven down from the upper surface. The excess length of nail coming through the wood of the running surface is bent back toward the rear of the vehicle.

Old Man pointed out that this was an unsatisfactory way of constructing a toboggan since the bent nails would work away from the boards when the vehicle was in use. Also wear on the boards, such as would be produced by traveling over windfalls, would soon expose too much of the nailed surface. These predictions were fulfilled. After his first trip with the new toboggan Hans removed the nails and drove them into the vehicle from the running surface. Old Man pointed out that many people join the crosspieces to the runners with babiche line. When this is done, the worker first drills a hole through the thickness of the crosspiece and then makes two holes through the runners. The line is countersunk where it passes under the body of the vehicle.

When all of the crosspieces are in place, the running surface of the toboggan is planed smooth, care being taken to avoid the projecting nails. The rear end of the boards are sawed even with the last crosspiece. A three quarter inch hole is drilled in the exact center of the front of the vehicle between the two center boards and directly below the forward pair of crosspieces. Here the guide rope, a piece of manilla line about a half inch in diameter and four yards long, will be tied. Two holes, half an inch in diameter, are then drilled in the front of each of the outside running boards immediately below the forward crosspieces. In line with these holes, grooves are cut in the outer bevelled edges of the forward cross-
[284] pieces. From these holes lines, of double twisted babiche or insulated copper cable, bend around the front of the vehicle and are then drawn back to the first grooved crosspiece where they are fastened together. These lines serve to prevent the curve from leaving the toboggan when the wood becomes damp. On each side of the toboggan, between the first and last grooved crosspiece, a tight babiche or insulated wire line is strung. The line passes through the grooves and is fastened to the rear crosspiece. This lashing is used to secure the dog harness, and under it passes the cordage that secures goods on the toboggan.

398 An attempt was made to note the emotions expressed by Hans during the construction
335 of a toboggan. He was somewhat uncertain if the materials available were adequate for the
157 task. For example, he was dissatisfied with the fact that one of the boards was hewed from black birch instead of white, fearing that the knots would cause it to split. In putting to-

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gether the vehicle he worked carefully, but inevitable accidents occurred. Several times the partially dried wood used for crosspieces split when nailed in place. Hans did not go out of his way to rectify these damages. In other words, he revealed no evidence of a drive toward perfection. He was always aware of the limits of the material which he was using but was not well satisfied with the finished product. About half-way through the construction process, Hans expressed the desire for sufficient skins with which to buy a commercially manufactured toboggan during his Christmas visit to Lower Post.[9]

Toboggans are built by men. When carrying a passenger, this vehicle is guided by handlebars. The construction of these was not observed. Their principal feature is a pair of curved wooden handles secured together with crosspieces and lashed to the toboggan. The handlebars are placed about ten inches from the rear of the vehicle, leaving a small space on which a man can stand. The partially enclosed cariole was never seen in the Kaska area.

From three to six dogs are used to draw a toboggan. Dogs are hitched one behind the other, one dog being consistently employed as a leader. The fanwise type of harness is not used and, indeed, would not be adapted to the wooded brushy country of the area. Dog harness is made by women from one and a half inch canvas webbing and includes a collar made of tanned mooschide stuffed with moose hairs and sewn with babiche. The traces are secured to the collar, while a cinch strap, containing two or three small sleigh bells, is fitted around the dog's back to keep the harness in place. The harness of each dog behind the leader is fitted with steel rings which are attached to inch long steel snap fasteners at the end of the traces. These fasteners are also used to harness the last dog to the lashing of the toboggan.

A man generally packs the toboggan but may be assisted by his wife. The heaviest load is placed in the rear of the vehicle. The goods are set on the floor boards, cooking pots and frying pans being placed on top of the main load. The outfit is then covered with a large canvas tarp which is tied down to the toboggan's lashing with several pieces of manila rope. The rope is first secured to the lashing with an overhand knot. Passing across the top of the load it bends under the lashing on the opposite side of the vehicle and is pulled tight before being drawn back to the first side. This process continues to the end of the cordage which is then tied to the lashing with a single overhand knot. A new piece of cordage is taken and the tying continued. Cut or uncut wood is also lashed down in this fashion. Lunch for people traveling is placed in a packsack, which is tied between the handlebars when this apparatus is in use. When children or women ride on the toboggan, they are seated so that their backs rest against the handlebar cross pieces. Folded blankets are placed on the floor boards, an eiderdown sleeping robe is spread on top of these and is drawn tightly around the person's body so that it covers the head like a hood. This serves to keep off falling snow. The covering is then lashed to the handlebars and to the side lashing. When the traveler temporarily leaves this shelter, the blankets are immediately closed in order to prevent the heated, damp blankets from freezing. After the toboggan is packed, the man's wife or a younger boy harnesses the dogs to the vehicle.

[9] Although Hans' trapping luck was rather poor, the fact that the ethnographer was willing to buy his toboggan enabled him to satisfy his desire. The toboggan, whose manufacture has just been described, is now in the Yale Peabody Museum of Natural History.

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493 481 In traveling with a toboggan after a snowfall, it is necessary for someone with snowshoes to precede the dogs and break trail for them as well as to clear windfalls and bulwark the ascents to ridges. Men or women or adolescent children may break trail. If possible, two persons are used to break trail, one following behind the other. The person guiding the toboggan (usually a man) runs behind the vehicle on snowshoes (Pl. 7, B). Such guidance is particularly important when the trail runs downhill, as it is then necessary to restrain the progress of the vehicle. Going uphill assistance must be given to the dogs. This is generally done by the person whose task it is to guide the toboggan running in front with the guide rope and pulling. The rope is not pulled directly in front of the dogs but from a side. On the diagonal ascent of a ridge the guide rope is pulled from the uphill side of the trail in order to prevent the conveyance from slipping. When handlebars are used, dogs are assisted by pushing the toboggan from behind while on a steep hill further help is given by someone else tugging on the dog harness (Pl. 12, A).

A particular danger in traveling across frozen lake and river surfaces is encountered from overflows. These are produced by sinking ice, through which a small amount of water may seep without freezing. Sometimes overflows are impossible to detect in advance, being covered with freshly falling snow. The unfrozen water quickly forms ice on the toboggan boards and, if the unaccustomed friction causes the dogs to halt, may freeze the vehicle to the spot. When a toboggan runs into an overflow and the forming ice begins to hold back the dogs, quick help is given to assist the animals. As soon as the vehicle is on dry snow it is tilted to one side and the ice knocked free with the back of an ax. Remaining ice is scraped free with the ax blade. Sometimes this is not sufficient to remove all the ice. Then the toboggan must be unpacked, a fire made, and the ice melted loose, after which the boards are allowed to dry. Despite the recognized danger of overflows, a suspicious spot of ice is often run over swiftly in order to avoid a lengthy detour. To guard against such danger spots, the person breaking trail often secures a long pole and, well in advance of the vehicle, tests the ice before each step. When not in use the toboggan is turned upside down, on its side, or is leaned against a building with the rear portion resting on the ground. It is rarely placed on a sleigh rack.

493 177 398 335 The construction of the Yukon sleigh was not observed. Such vehicles, made from birch, are from seven to nine feet long and are far heavier than toboggans. Their construction was probably learned from white men. The basis of the conveyance consists of two runners, which are several inches longer than the floor boards of the body. The runners are three inches wide and one inch thick. After being bent they are fitted with readymade steel runners that are attached with screws. The floor slats of the sleigh are made of birch wood; four pieces of lumber are required, each four inches wide and about a half inch thick. They are held together by crosspieces, five inches wide and half an inch thick. The crosspieces are placed twenty inches apart, their number depending on the length of the vehicle, and are secured to the floor boards by means of carriage bolts. The floor of the sleigh meets the upturned runners in front but along the rest of the vehicle it is supported about four inches above each runner by stanchions, five inches long, four inches wide, and three inches thick. These blocks are spaced about ten inches apart beginning about four inches from the rear of the sleigh. The body and runners are joined to the stanchions by means of screws. Sleighs are usually provided with handlebars, which are about eighteen inches high and

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much longer than those found on toboggans. Instead of fitting on the rear of the conveyance, the handlebars of a sleigh extend about halfway to the front of the vehicle where they are screwed in place. A lashing of babiche runs along each side of the sleigh body and is used for tying down the load. Shafts are employed with the dog harness. These are cut from green spruce poles, about six feet long and three inches in their greatest diameter. They are attached to the sleigh by means of babiche. The line passes through a pair of holes drilled in the most forward stanchion on each side of the sleigh and through corresponding holes drilled at the lower end of each shaft.

Sleighs are packed the same way as toboggans and their management follows similar principles. When not in use they stand on one side or else are stored on sleigh racks. When left standing with the runners in the snow, ice forms which must be knocked off before the vehicle can be used.

Toy sleds, about three or four feet long, are played with by children around the winter settlements.

Foot travel is the commonest form of overland summer travel, although some Nelson Indian children and women ride horses when long distances must be covered. In winter, children from five or six years of age generally walk, while younger children are packed on the mother's back or else ride in sleighs and toboggans. No particular type of foot-gear is regarded as most suitable for land travel in summer, although moccasins are preferred for hunting. In winter moccasins are always worn and, under these, snowshoes.

Snowshoes have several functions. By relieving the strain of plodding through deep snow and the problem of slipping on an unevenly packed trail, they reduce fatigue in winter travel. They also facilitate travel, since a person can go faster on snowshoes than by plodding through deep snow unaided. Finally these aids are necessary in breaking trail for dogs, and therefore increase the daily distance which these animals can cover.

Snowshoes are of two types. The first, used for hunting and trapping, generally equals the wearer's height in length and is about a foot wide. These are used when a man desires to travel cross country as rapidly as possible, the size of the webbed area preventing him from sinking too deeply into the snow. While such "big snowshoes" are known, their use was not observed among the Upper Liard Indians during the period of field work. The second type is used in breaking trail for dogs and vehicles and for hunting or trapping. Their length is also apportioned to the height of the wearer, a five foot man generally wearing snowshoes about three feet long and ten inches wide. Left and right foot snowshoes are recognized, the greatest curve of the wood being on the outside of the foot. Snowshoe frames are prepared by men and the panels are almost always filled by women. The details of lacing and of the foot lashing follow the style which has been traditional since aboriginal times and will not be described here.

In contrast to what has been said for other areas,[18] the Kaska Indian tends to walk on

[18] A detailed description of putting on, walking, and turning with snowshoes will be found in Osgood, *Ingalik Material Culture* (1940), 349-350. The picture he gives there is in complete agreement with what was noted among the Kaska. Personal use of snowshoes revealed that it takes no more than two or three hours to become used to them in walking. Learning to turn takes longer time, and a number of days are required before their presence on the feet ceases to be consciously noted. So far as their indispensability is concerned, there can be no question.

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CONSTRUCTION

[END PLATE 6]